

**CLAIMS:**

What is claimed is:

1. A method of generating an estimate of an amount of  
5 time required to complete a content request for content  
to be transmitted over a network, comprising:  
receiving a first estimate of an amount of time to  
retrieve or prepare requested content in a content source  
device;  
10 generating a second estimate of an amount of time to  
receive the requested content over a communication link  
from the content source device;  
generating a third estimate of a total amount of  
time to complete the content request based on the first  
15 and second time estimates;  
generating a graphical representation of the third  
estimate; and  
outputting the graphical representation on a display  
device.  
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2. The method of claim 1, wherein the first estimate is  
generated using a table lookup of previously handled  
content requests.
- 25 3. The method of claim 2, wherein the table lookup  
includes finding one or more entries in a table that have  
parameters similar to parameters included in the content  
request.
- 30 4. The method of claim 2, wherein the table lookup  
includes identifying an estimate of a minimum, maximum

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and average amount of time to retrieve or prepare the requested content.

5. The method of claim 1, wherein the first estimate is  
5 generated based on information identifying the processes used to retrieve or prepare the requested content.

6. The method of claim 5, wherein the information  
includes at least one of an identifier of a program to be  
10 used to retrieve or prepare the requested content, a typical execution time for the program, a number of lines of code in the program, and a number of lines of code per second handled by a processor of the content source device.

15 7. The method of claim 1, wherein the second estimate is generated based on an amount of content to be transmitted and a transmission rate.

20 8. The method of claim 1, wherein the third estimate includes a minimum estimated time of completion, a maximum estimated time of completion and an average time of completion for the content request.

25 9. The method of claim 8, wherein the graphical representation includes an indicator for each of the minimum estimated time of completion, maximum estimated time of completion and average time of completion for the content request.

30 10. The method of claim 1, wherein the graphical representation includes associated text, and wherein the

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associated text is changed from a first text to a second text when the requested content begins to be received from the content source device.

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11. The method of claim 1, further comprising:  
updating the graphical representation based on the occurrence of an event.

10 12. The method of claim 11, wherein the event is an increment of a predetermined amount of time of a system clock.

15 13. The method of claim 11, wherein the event is receipt of a portion of the requested content.

14. The method of claim 1, wherein the graphical representation represents the third estimate as a combination of the first estimate and the second  
20 estimate, wherein a representation of the first estimate in the graphical representation is different from a representation of the second estimate in the graphical representation.

25 15. The method of claim 14, wherein the first estimate is represented in a different color than the second estimate.

30 16. The method of claim 1, wherein the graphical representation is a progress bar.

17. The method of claim 1, wherein the method is implemented by a web browser application on a computing device.

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18. The method of claim 1, wherein the method is implemented by a plugin application to a web browser application on a computing device.

10 19. A method of generating an estimate of an amount of time required to retrieve or prepare requested content, comprising:

receiving a request for content, the request including one or more parameters;

15 identifying previously completed request information regarding a previously completed request based on the one or more parameters, the information including a time required to retrieve or prepare the content of the previously completed request;

20 generating a time estimate of an amount of time required to retrieve or prepare the requested content based on the previously completed request information;

generating a graphical representation of the time estimate; and

25 outputting the graphical representation on a display device.

20. The method of claim 19, wherein identifying previously completed request information includes using a  
30 table lookup in a previously handled content request table.

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21. The method of claim 19, further comprising  
calculating an estimate of a minimum, maximum and average  
amount of time to retrieve or prepare the requested  
content based on the identified previously completed  
5 request information.

22. The method of claim 19, wherein generating a time  
estimate of an amount of time required to retrieve or  
prepare the requested content includes generating the  
10 time estimate based on a time to retrieve or prepare  
content identified in the previously completed request  
information, a system load at the time of the previously  
completed request, and a current system load.

15 23. The method of claim 20, further comprising:  
storing a new entry in the previously handled  
content request table for the request for content.

24. The method of claim 19, further comprising:  
20 transmitting the time estimate to a client device.

25. A computer program product in a computer readable  
medium for generating an estimate of an amount of time  
required to complete a content request for content to be  
25 transmitted over a network, comprising:

first instructions for receiving a first estimate of  
an amount of time to retrieve or prepare requested  
content in a content source device;

second instructions for generating a second estimate  
30 of an amount of time to receive the requested content  
over a communication link from the content source device;

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third instructions for generating a third estimate of a total amount of time to complete the content request based on the first and second time estimates;

fourth instructions for generating a graphical  
5 representation of the third estimate; and

fifth instructions for outputting the graphical representation on a display device.

26. The computer program product of claim 25, wherein  
10 the second instructions for generating the second estimate includes instructions for generating the second estimate based on an amount of content to be transmitted and a transmission rate.

15 27. The computer program product of claim 25, wherein the third estimate includes a minimum estimated time of completion, a maximum estimated time of completion and an average time of completion for the content request.

20 28. The computer program product of claim 27, wherein the graphical representation includes an indicator for each of the minimum estimated time of completion, maximum estimated time of completion and average time of completion for the content request.

25 29. The computer program product of claim 25, wherein the graphical representation includes associated text, and wherein the associated text is changed from a first text to a second text when the requested content begins  
30 to be received from the content source device.

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30. The computer program product of claim 25, further comprising:

5 sixth instructions for updating the graphical representation based on the occurrence of an event.

31. The computer program product of claim 30, wherein the event is an increment of a predetermined amount of time of a system clock.

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32. The computer program product of claim 30, wherein the event is receipt of a portion of the requested content.

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33. The computer program product of claim 25, wherein the graphical representation represents the third estimate as a combination of the first estimate and the second estimate, wherein a representation of the first estimate in the graphical representation is different  
20 from a representation of the second estimate in the graphical representation.

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34. The computer program product of claim 33, wherein the first estimate is represented in a different color than the second estimate.

35. The computer program product of claim 25, wherein the graphical representation is a progress bar.

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36. A computer program product in a computer readable medium for generating an estimate of an amount of time required to retrieve or prepare requested content,

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comprising:

first instructions for receiving a request for content, the request including one or more parameters;

second instructions for identifying previously  
5 completed request information regarding a previously completed request based on the one or more parameters, the information including a time required to retrieve or prepare the content of the previously completed request;

third instructions for generating a time estimate of  
10 an amount of time required to retrieve or prepare the requested content based on the previously completed request information;

fourth instructions for generating a graphical representation of the time estimate; and

15 fifth instructions for outputting the graphical representation on a display device.

37. The computer program product of claim 36, wherein the second instructions for identifying previously  
20 completed request information include instructions for using a table lookup in a previously handled content request table.

38. The computer program product of claim 36, further  
25 comprising sixth instructions for calculating an estimate of a minimum, maximum and average amount of time to retrieve or prepare the requested content based on the identified previously completed request information.

30 39. The computer program product of claim 36, wherein the third instructions for generating a time estimate of



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an amount of time required to retrieve or prepare the requested content include instructions for generating the time estimate based on a time to retrieve or prepare content identified in the previously completed request  
5 information, a system load at the time of the previously completed request, and a current system load.

40. The computer program product of claim 37, further comprising:

10 sixth instructions for storing a new entry in the previously handled content request table for the request for content.

41. The computer program product of claim 36, further  
15 comprising:

sixth instructions for transmitting the time estimate to a client device.

42. An apparatus for generating an estimate of an amount  
20 of time required to complete a content request for content to be transmitted over a network, comprising:

means for receiving a first estimate of an amount of time to retrieve or prepare requested content in a content source device;

25 means for generating a second estimate of an amount of time to receive the requested content over a communication link from the content source device;

means for generating a third estimate of a total amount of time to complete the content request based on  
30 the first and second time estimates;

means for generating a graphical representation of the third estimate; and

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means for outputting the graphical representation on a display device.

43. An apparatus for generating an estimate of an amount  
5 of time required to retrieve or prepare requested content, comprising:

means for receiving a request for content, the request including one or more parameters;

means for identifying previously completed request  
10 information regarding a previously completed request based on the one or more parameters, the information including a time required to retrieve or prepare the content of the previously completed request;

means for generating a time estimate of an amount of  
15 time required to retrieve or prepare the requested content based on the previously completed request information;

means for generating a graphical representation of the time estimate; and

20 means for outputting the graphical representation on a display device.